IFWO

RAW SEQUENCE LISTING DATE: 09/01/2004
PATENT APPLICATION: **US/10/807,556** TIME: 12:50:42

Input Set : **N:\Crf3\RULE60\10807556.raw**
Output Set: **N:\CRF4\09012004\J807556.raw**

SEQUENCE LISTING

3 (1) GENERAL INFORMATION:
7 (i) APPLICANT: Charles Kunsch
8 Gil H. Choi
9 Patrick S. Dillon
10 Craig A. Rosen
11 Steven C. Barash
12 Michael R. Fannon
20 (ii) TITLE OF INVENTION: Staphylococcus aureus Polynucleotides and
21 Sequences
25 (iii) NUMBER OF SEQUENCES: 5255
29 (iv) CORRESPONDENCE ADDRESS:
31 (A) ADDRESSEE: Human Genome Sciences, Inc.
33 (B) STREET: 9410 Key West Avenue
35 (C) CITY: Rockville
37 (D) STATE: Maryland
39 (E) COUNTRY: USA
41 (F) ZIP: 20850
45 (v) COMPUTER READABLE FORM:
47 (A) MEDIUM TYPE: Diskette, 3.50 inch, 1.4Mb storage
49 (B) COMPUTER: HP Vectra 486/33
51 (C) OPERATING SYSTEM: MSDOS version 6.2
53 (D) SOFTWARE: ASCII Text
57 (vi) CURRENT APPLICATION DATA:
C--> 59 **(A) APPLICATION NUMBER: US/10/807,556**
C--> 61 **(B) FILING DATE: 24-Mar-2004**
63 (C) CLASSIFICATION:
67 (vii) PRIOR APPLICATION DATA:
69 (A) APPLICATION NUMBER: US/08/781,986
71 (B) FILING DATE: 03-JANUARY-1997
75 (viii) ATTORNEY/AGENT INFORMATION:
77 (A) NAME: Benson, Bob
79 (B) REGISTRATION NUMBER: 30,446
81 (C) REFERENCE/DOCKET NUMBER: PB248PP
C--> 85 **(ix) TELECOMMUNICATION INFORMATION:**
87 (A) TELEPHONE: (301) 309-8504
89 (B) TELEFAX: (301) 309-8512
97 (2) INFORMATION FOR SEQ ID NO: 1:
99 (i) SEQUENCE CHARACTERISTICS:
100 (A) LENGTH: 5895 base pairs
101 (B) TYPE: nucleic acid
102 (C) STRANDEDNESS: double
103 (D) TOPOLOGY: linear

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107 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

109	TCCATTATGA AGTCACAAGT ACTATAAGCT GCGATGTTAC CAATGTTTTT TAAAATCCCA	60
C--> **111**	**GTAATAAAAT CAAAAAATAA GTTAAATAAT GTATTCATTT TAAGTCCTCC TTAATAAAGA**	**120**
113	AAATAGGTAA TAATGTAATA GCTTCTATTA TGATGCCTAA TTGAATGAAT TGGGCAAATG	180
115	GCTCTTTGAT GATAAGTGTG ATAATGAAAA GGGTTAAACT AACAATAATC GCATAATATT	240
117	TTTTTCGTTT AATAAGTCGC ACAGGAATGG GCTTCTTTTT AGTTGCTGCA GGAGCATATA	300
119	CTGAGATTAC ACCTAAAGAA ATAACTGTTA AAATAATCAT AATTAAAAAG TTAATATGAA	360
121	AATTTACTAT TACTAAAGGT AAAAGTATAA ATAGTATAAT ACTTTCTACA TAACACCAAA	420
123	AAGAAGAAGG TGCATGTGCA CCATGTGCAT GTCTTCTTAT TAAATAAAAT GTTAAATTCG	480
125	TAATTAACGT AAACAGAAAA ATGTTTAAAA TATAGGCAAT AGTATACATA ACAATTAATT	540
127	TACCTATATT TTTAGCTAAG ACCTGCATCC CTAATCGTAC TTGCAAAAAT TGAATATGAT	600
129	CTAAGTTATT TCTCTTTTGA AGATACGTGG CAAACTGGTC AATTTTATTA TCAAAATAAT	660
131	TCAATTTTAC ACCACTCTCC TCACTGTCAT TATACGATTT AGTACAATCT TTTATCATTA	720
133	TATTGCCTAA CTGTAGGAAA TAAATACTTA ACTGTTAAAT GTAATTTGTA TTTAATATTT	780
135	TAACATAAAA AAATTTACAG TTAAGAATAA AAAACGACTA GTTAAGAAAA ATTGGAAAAT	840
137	AAATGCTTTT AGCATGTTTT AATATAACTA GATCACAGAG ATGTGATGGA AAATAGTTGA	900
139	TGAGTTGTTT AATTTTAAGA ATTTTTATCT TAATTAAGGA AGGAGTGATT TCAATGGCAC	960
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145	GTACTAAAAG TATGAGTTAT TAAGCCATCC CAACTTAATA ACCATGTAAA ATTAGCAAGT	1140
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149	TATCATTACA GATAATTATT TCTAGCATGT AAGCTATCGT AAACAACATC GATTTATCAT	1260
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155	CTTTTTTGTA ATGAAGAAGG GATGAGTTAA TCATCATTAT GAGACCCGCC GTTAAAATAT	1440
157	ATGAATAAGT CTAATGTTGG AAAAGGTCAA AAAATTAATC AATTTAATTA AGAAAATCAT	1500
159	TCATTTGCAA AGGGCGAAAT GGGTTCTTAC TGAGTTATCT ATTATAAAAA AATAAACATA	1560
161	GACTTATGAA AAATCTCTCA TAAATCTATG TTTAGTCATG ACATGTGTTA AATATTATTT	1620
163	CGGGCGCTTC TTATTTATAC AAATCTAATT TAATACTTTT AAATACAGGT ATATTTTCGC	1680
165	GTTGCTGTTC TACTTCATTT AAGTTTAAAT CTACAGTCAA AATATCTGCG GATTCATTTA	1740
167	ATTCTCCAAC TAAATCTCCA TTTGGGTTTA TAACTATCGA ATGACCAGCA TATTCTGTGT	1800
169	TACCATCGAA TCCAGTGCTA TTAGTTCCAA TGACAAACAT ATTATTTTCA ATTGCACGTG	1860
171	CCTTTAGTAA TGAATGCCAA TGTTGAAGAC GTGACATAGG CCATTGCGCC ACATAAAATG	1920
173	CAATTTTAGC ACCACTACGA GCAGGATATC TTAATAATTC TGGAAAACGT AAATCATAAC	1980
175	AGATAAGTTG GGTCACATAA GTACCGTCAG ACAATTGAAA GGGTTCAGCT ACGTATTCGC	2040
177	CAGCGGTTAA AAATTCATGC TCTCTTAACA TAGGAACTAA ATGAACTTTG TCGTATTCAT	2100
179	TAATCAGCTG GCCACTTTTA TTCACACTAA AAGCTGTATT AAATATTTGA TTGTTTCTAA	2160
181	TGTTAGAAAC TGACCCAGCT ACGATATCGA CTTTATATTT TTCAGCTAAA TGTTTAATAA	2220
183	ATGAAAAACT TTGTCCTAGA TTATTATCTG CTTTTTCATT TAAATGCTCT AAATCATAGC	2280
185	CATTATTCCA CATTTCAGGT AAAACGACTA CATCTACTTC AGCATTCATA TTTTTTTCGA	2340
187	ACCATTGCGT TATTTGAGTT TCATTTTTAG AACTATCTCC AAAAACAATC GGTAATTGAT	2400
189	AAATTTGGAC TTTCATAACA TCACATCCTT GATAGATCTT ATATATAACT TACTAAAAGT	2460
191	TATGTTGAAA CGCAAAAAAC GAGCACAAGA CATAAAATCA AAGTCCTAGG CTCTACAAAG	2520
193	TTATATTGAC AGTAGTTGAT GGGGCCCCAA CATAGAGAAA TTGGAACACC AATTTCTACA	2580
195	GACAATGCAA GTTGGGGTGG GCTCTAACAT AAAGAAATAC TTTTTCTTTA GAAATTAGTA	2640
197	TTTCTTATAC ATGAGTTTTA CTCATGTATT CCTATTCTTA AGTGCACATT AGCAGCGGCT	2700
199	AATGTGTAAG AACTACTACA TAATGAATAA CTAATGATTC TTTATCATTT CTGTCCCATT	2760
201	CCTAACAATA TATTGATTAT TTTTTTATTA CGAAACGATC TTCCACTGGA TTAAATGTTT	2820
203	TTTCGCCAGC AGCTTCACGA ATATCACCAA ATGGCATTTG AGCAATAAGT TTCCAACTTT	2880

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205 TAGGAATATT AAATTCATTT GAAGTCATCT CATCAACAAG TGGATTATAG TGTTGTAATG 2940
207 AAGCACCTAT GCCTTTAGTA GCTAATGCAG TCCAAATTGC AAATTGATGC ATGGCATTTG 3000
209 TTTGAGTTGA CCATATTGCA AAATTATCAT AGTAGTTTGG CATTTGTTCT TGTAAACCAC 3060
211 TTACAACATC TTGATCTTCA TAAAACAAAA TTGTACCGTA TGAATGTTTG AAGTTATCAA 3120
213 TTTTTTGTTC AGTTGGCTCG AAATCACGAT TCTCTCCCAT GACTTCTTTT AAAATTGCTT 3180
215 TTGTGTTATC CCAAAATTTA TTATTGTTGT CATTTAACAA GAGAACAATT CTAGTTGATT 3240
217 GAGAATTAAA TGATGAAGGA ACATGTTTAA CTGCATGTGC AATCATTGAT TCTAATTCGT 3300
219 CATCGCTAAT TGATATCGAA TCTTTCAAAT TATATATTGA ACGTCTTTCT TCCATTGCAT 3360
221 TGTCAAAAGT CATTGCTTTT TTATCTTTTT TAAATAAGCC CATAATTATT GCTCCTTCTT 3420
223 TAGTAAAGAA TACTTAATAG ACTAAGTATA AAATTTATAC TCGTACTTGT AAAGCAATAT 3480
225 TTACGAAAAT TTCAAGAATA TTAATATTCA TTTTCAAATT CCAAATATAA ATGCATTTTC 3540
227 AACGCATATT TATTATACTT AGATTAATAC TTACATGAAA AAGGGAGGTG TCTCGTGAAA 3600
229 TGTCATATCA TTGGTTTAAG AAAATGTTAC TTTCAACAAG TATTTTAATT TTAAGTAGTA 3660
231 GTAGTTTAGG GCTTGCAACG CACACAGTTG AAGCAAAGGA TAACTTAAAT GGAGAAAAAC 3720
233 CAACTACTAA TTTGAATCAT AATATAACTT CACCATCAGT AAATAGTGAA ATGAATAATA 3780
235 ATGAGACTGG GACACCTCAC GAATCAAATC AAACGGGTAA TGAAGGAACA GGTTCGAATA 3840
237 GTCGTGATGC TAATCCTGAT TCGAATAATG TGAAGCCAGA CTCAAACAAC CAAAACCCAA 3900
239 GTACAGATTC AAAACCAGAC CCAAATAACC AAAACTCAAG TCCGAATCCT AAACCAGATC 3960
241 CAGATAACCC GAAACCAAAA CCGGATCCAA AACCAGACCC AGATAAACCA AAGCCAAATC 4020
243 CGGATCCAAA ACCAGATCCA GATAACCCGA AACCAAATCC AGATCCAAAA CCAGACCCAG 4080
245 ATAAACCAAA GCCAAATCCG GATCCAAAAC CAGATCCAGA TAAACCAAAG CCAAATCCGA 4140
247 ATCCAAAACC AGACCCTAAT AAGCCAAATC CTAACCCGTC ACCAGATCCC GATCAACCTG 4200
249 GGGATTCCAA TCATTCTGGT GGCTCGAAAA ATGGGGGGAC ATGGAACCCA AATGCTTCAG 4260
251 ATGGATCTAA TCAAGGTCAA TGGCAACCAA ATGGGAATCA AGGAAACTCA CAAAATCCTA 4320
253 CTGGTAATGA TTTTGTATCC CAACGATTTT TAGCCTTGGC AAATGGGGCT TACAAGTATA 4380
255 ATCCGTATAT TTTAAATCAA ATTAATAAGT TGGGCAAAGA TTATGGAGAA GTTACTGATG 4440
257 AAGACATTTA TAATATTATT CGAAAACAAA ATTTCAGCGG AAATGCATAT TTAAATGGAT 4500
259 TACAACAGCA ATCGAATTAC TTTAGATTCC AATATTTCAA TCCATTGAAA TCAGAAAGGT 4560
261 ACTATCGTAA TTTAGATGAA CAAGTACTCG CATTAATTAC TGGTGAAATT GGATCAATGC 4620
263 CAGATTTGAA AAAGCCCGAA GATAAGCCGG ATTCAAAACA ACGCTCATTT GAACCGCATG 4680
265 AAAAAGACGA TTTTACAGTA GTTAAAAAAC AAGAAGATAA TAAGAAAAGT GCGTCAACTG 4740
267 CATATAGTAA AAGTTGGCTA GCAATTGTAT GTTCTATGAT GGTGGTATTT TCAATCATGC 4800
269 TATTCTTATT TGTAAAGCGA AATAAAAAGA AAAATAAAAA CGAATCACAG CGACGATAAT 4860
271 CCGTGTGTGA TTCGTTTTTT TTATTATGGA ATAAAAATGT GATATATAAA ATTCGCTTGT 4920
273 TCCGTGGCTT TTTTCAAAGC CTCAGGATTA AGTAATTGGA ATATAACGAC AAATCCGTTT 4980
275 TGTAACATAT GGATAATAAT TGGAACAGCA AGCCGTTTTG TCCAAACATA TGCTAATGAA 5040
277 AAAATGACAC CCATACCAAA ATAAACTGGA ATAAATTTGA AATCATTATG TGCTAATGCA 5100
279 AATATTAATG AACTTACTGT TGTAGCAATA ATAAATGCCA CGATACGATT ACCTTTAATC 5160
281 GCATTAAATA ATTCTCCAAA GATTACTTTT CTGAATACAT ATTCTTCTAA TAAAGGACCA 5220
283 ATAATAGATA CAAAGAAGAT AAATATAGGT ATTTTTCGAG CAATAATAAT TAGCTTTTCT 5280
285 GTATTAGGAC TTACTTGTTG TCCACCATAA ATTTGCGTTA ATACAATGCT CACTACCATT 5340
287 TGATAAATCA TTACCAATGC AAATCCAAGC AATGCCCATG GAATGATATA TTTTTTAGGT 5400
289 TCTTTAACTT CTAATTCTAA TTTTGTTGGA TTTTTAATTT TTAAATTAAT TAAAATAATC 5460
291 GTCGTGGCGG CGATTAAAAA TAGAACAAGT TGTATGTAAA TGACTGCTTT AGTCAGTTCT 5520
293 ATGCCACTAT ATTGTACAAA TGGTAATTTT TTTACAATGA GAAGCGGTAA AAATTGAGAC 5580
295 AATATATAAA TAATAACAGT TAGCAATGAT GCCCATAATC TTGTCATAAT TTTCCTCCAA 5640
297 ATATTTGTTT ATAATTTATT TTATCGTAAA TAACTTGAAG TTACAAAACT TAATTAAAAG 5700
299 GTTATGACTT GAAATTTTGA CCAAATTTGA TTATTATAAA TGTATGTTAG CACTCTTTAA 5760
301 TGTTAAGTGC TAAACTTTAG GTTTTTTAAG GAGGAACAAT CATGCTAAAA CCAATTGGAA 5820

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303 ATCGTGTGAT TATTGAGAAA AAAGAACAAG AACAAACAAC TAAAAGTGGN ATTGTTTAAC 5880
305 TGATAGTGCT AAAGA 5895
307 (2) INFORMATION FOR SEQ ID NO: 2:
309 (i) SEQUENCE CHARACTERISTICS:
310 (A) LENGTH: 6796 base pairs
311 (B) TYPE: nucleic acid
312 (C) STRANDEDNESS: double
313 (D) TOPOLOGY: linear
317 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
319 TTTGAAAAAA CAAGGTACGA TTGGTTTAAT AACATATATG AGAACCGATT CTACACGTAT 60
-> 321 **TTCAGATACT GCCAAAGTTG AAGCAAAACA GTATATAACT GATAAATACG GTGAATCTTA** 120
323 CACTTCTAAA CGTAAAGCAT CAGGGAAACA AGGTGACCAA GATGCCCATG AGGCTATTAG 180
325 ACCTTCAAGT ACTATGCGTA CGCCAGATGA TATGAAGTCA TTTTTGACGA AAGACCAATA 240
327 CCGATTATAC AAATTAATTT GGGAACGATT TGTTGCTAGT CAAATGGCTC CAGCAATACT 300
329 TGATACAGTC TCATTAGACA TAACACAAGG TGACATTAAA TTTAGAGCGA ATGGTCAAAC 360
331 AATCAAGTTT AAAGGATTTA TGACACTTTA TGTAGAAACT AAAGATGATA GTGATAGCGA 420
333 AAAGGAAAAT AAACTGCCTA AATTAGAGCA AGGTGATAAA GTCACAGCAA CTCAAATTGA 480
335 ACCAGCTCAA CACTATACAC AACCACCTCC AAGATATACT GAGGCGAGAT TAGTAAAAAC 540
337 ACTAGAAGAA TTGAAAATTG GGCGACCATC AACTTATGCA CCGACAATAG ATACGATTCA 600
339 AAAGCGTAAC TATGTCAAAT TAGAAAGTAA GCGTTTTGTT CCTACTGAGT TGGGAGAAAT 660
341 AGTTCATGAA CAAGTGAAAG AATACTTCCC AGAGATTATT GATGTGGAAT TCACAGTGAA 720
343 TATGGAAACG TTACTTGATA AGATTGCAGA AGGCGACATT ACATGGAGGA AAGTAATCGA 780
345 CGGTTTCTTT AGTAGCTTTA AACAAGATGT TGAACGTGCT GAAGAAGAGA TGGAAAAGAT 840
347 TGAAATCAAA GATGAGCCAG CCGGTGAAGA CTGTGAAATT TGTGGTTCTC CTATGGTTAT 900
349 AAAAATGGGA CGCTATGGTA AGTTCATGGC TTGCTCAAAC TTCCCGGATT GTCGTAATAC 960
351 AAAAGCGATA GTTAAGTCTA TTGGTGTTAA ATGTCCAAAA TGTAATGATG GTGACGTCGT 1020
353 AGAAAGAAAA TCTAAAAAGA ATCGTGTCTT TTATGGATGT TCGAAATATC CTGAATGCGA 1080
355 CTTTATCTCT TGGGATAAGC CGATTGGAAG AGATTGTCCA AAATGTAACC AATATCTTGT 1140
357 TGAAAATAAA AAAGGCAAGA CAACACAAGT AATATGTTCA AATTGCGATT ATAAAGAGGC 1200
359 AGCGCAGAAA TAATATTTTT ATTTCCTAGA TACATTTTAA GATTGTTAAA TAGAATCATT 1260
361 AGTGAATCTT ATTTTAAAGA TAGTAAAGGA TTAATCTAAA TAAGTGCGGA TAATATAAAC 1320
363 ATAACAACAT AATTAAMAGA CATAAATGAC AATAAAAGGA GTATAGAAAT GACTCAAACT 1380
365 GTAAATGTAA TAGGTGCTGG TCTTGCCGGT TCAGAAGCGG CATATCAATT AGCTGAAAGA 1440
367 GGAATTAAAG TTAATCTAAT AGAGATGAGA CCTGTTAAAC AAACACCAGC GCACCATACT 1500
369 GATAAATTTG CGGAACTTGT ATGTTCCAAT TCATTACGCG GAAATGCTTT AACTAATGGT 1560
371 GTGGGTGTTT TAAAAGAAGA AATGAGAAGA TTGAATTCTA TAATTATTGA AGCGGCTGAT 1620
373 AAGGCACGAG TTCCAGCTGG TGGTGCATTA GCAGTTGATA GACACGATTT TTCAGGTTAT 1680
375 ATTACTGAAA CACTTAAAAA TCATGAAAAT ATCACAGTTA TTAATGAAGA AATTAATGCC 1740
377 ATTCCAGATG GATACACAAT TATCGCAACA GGACCACTTA CTACAGAAAC CCTTGCGCAA 1800
379 GAAATAGTGG ACATTACTGG TAAAGATCAA CTTTATTTCT ATGATGCGGC TGCTCCAATT 1860
381 ATTGAAAAAG AATCTATTGA TATGGATAAA GTTTACTTAA AGTCCCGTTA TGATAAAGGT 1920
383 GAAGCTGCAT ATTTAAACTG TCCTATGACT GAGGATGAAT TTAATCGCTT TTATGATGCA 1980
385 GTATTAGAAG CTGAAGTTGC GCCTGTAAAT TCATTTGAAA AAGAAAAATA TTTCGAGGGT 2040
387 TGTATGCCTT TTGAAGTAAT GGCAGAACGC GGACGCAAGA CATTACTATT TGGACCAATG 2100
389 AAACCAGTAG GATTAGAAGA TCCAAAGACT GGGAAACGTC CTTATGCGGT GGTTCAATTA 2160
391 AGACAAGATG ACGCTGCTGG TACACTCTAC AATATTGTTG GCTTCCAAAC GCATTTAAAA 2220
393 TGGGGAGCTC AAAAAGAAGT CATTAAATTA ATTCCAGGCT TAGAAAATGT TGATATTGTT 2280
395 AGATATGGTG TGATGCATAG AAATACCTTC ATTAATTCAC CGGACGTATT AAACGAGAAA 2340
397 TATGAATTGA TTTCACAACC AAACATACAG TTTGCGGGAC AAATGACTGG TGTTGAAGGT 2400

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399 TATGTAGAAA GCGCAGCTAG CGGCTTAGTT GCAGGTATCA ATCTTGCGCA TAAAATATTA 2460
401 GGCAAGGGTG AGGTAGTATT TCCGAGAGAA ACAATGATTG GAAGTATGGC TTACTATATT 2520
403 TCTCATGCTA AAAACAATAA GAATTTCCAA CCTATGAATG CTAACTTCGG GTTATTACCA 2580
405 TCTTTAGAAA CTAGAATTAA AGATAAAAAA GAACGCTATG AAGCACAAGC TAATAGAGCT 2640
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411 TAGTCTTTTT AATTTTGGAA TTGTTACGTA TTTCTGACAA TTTAGAATTC GCATTCAAAA 2820
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415 AATAAACTTT ATTTAAAAGG CAATGAAATA ATAAATGGCA AGGCTATTAA TAAAGACTTT 2940
417 TAGTAATTAA TTTAAAAAAG AGGTATTCTA ATTAACAGGT TTTCCGATTA GTTACAATTA 3000
419 TTTAATTCTC AAAAGATTTA GAATTGATTA TCAAATTACT GTAAGCCCTT TGCTGTATAT 3060
421 GCTACAATTC TTATTGATGG AGGGTAAATG TATTGAATCA TATTCAAGAT GCGTTTTTAA 3120
423 ATACATTGAA AGTTGAACGG AATTTTTCGG AACACACATT GAAATCATAT CAAGATGACT 3180
425 TAATTCAGTT TAATCAATTT TTAGAACAAG AACATTTAGA GTTGAATACT TTTGAATACA 3240
427 GAGATGCTAG AAATTATTTG AGCTATTTAT ATTCAAATCA TTTGAAAAGA ACATCTGTTT 3300
429 CTCGTAAAAT CTCAACGTTA AGAACTTTCT ATGAATATTG GATGACGCTT GATGAGAACA 3360
431 TTATTAATCC ATTTGTTCAA TTAGTACATC CGAAAAAAGA AAAATATCTT CCGCAATTCT 3420
433 TTTACGAAGA AGAAATGGAA GCGTTATTCA AAACTGTAGA AGAGGACACT TCAAAAAATT 3480
435 TACGGGATCG AGTTATTCTT GAATTGTTGT ATGCTACAGG CATCCGTGTT TCGGAATTAG 3540
437 TAAATATTAA AAAACAAGAT ATAGATTTTT ACGCGAATGG TGTTACCGTA TTAGGAAAAG 3600
439 GGAGCAAAGA GCGCTTTGTA CCGTTTGGTG CTTATTGTAG ACAAAGCATC GAAAATTATT 3660
441 TAGAACATTT CAAACCAATT CAGTCATGCA ATCATGATTT TCTTATTGTA AATATGAAGG 3720
443 GTGAAGCAAT CACTGAACGC GGTGTACGAT ATGTTTTAAA TGATATTGTT AAACGAACAG 3780
445 CAGGCGTAAG TGAGATTCAT CCCCACAAGC TCAGACATAC ATTTGCAACG CATTTATTGA 3840
447 ATCAAGGTGC AGACCTAAGA ACAGTACAAT CGTTATTAGG TCATGTTAAT TTGTCAACAA 3900
449 CTGGTAAATA TACACACGTA TCTAACCAAC AATTAAGAAA AGTGTATCTA AATGCACATC 3960
451 CTCGAGCGAA AAAGGAGAAT GAAACATGAG TAATACAACA TTACATGCAA CAACAATTTA 4020
453 TGCTGTAAGA CATAATGGGA AAGCAGCTAT GGCTGGAGAT GGGCAAGTAA CGCTTGGTCA 4080
455 ACAAGTCATC ATGAAACAAA CGGCAAGAAA AGTGCGACGT TTATATGAAG GTAAAGTGTT 4140
457 AGCTGGTTTC GCAGGTAGTG TAGCAGATGC GTTTACGTTA TTTGAAAAAT TCGAAACAAA 4200
459 ATTACAACAG TTTAGTGGTA ACTTAGAAAG AGCTGCTGTT GAATTGGCAC AAGAATGGCG 4260
461 AGGCGATAAA CAATTACGTC AATTAGAAGC TATGCTAATT GTAATGGATA AAGATGCTAT 4320
463 TTTAGTTGTC AGTGGAACTG GCGAAGTTAT TGCTCCAGAT GATGACCTTA TCGCTATTGG 4380
465 ATCAGGAGGC AACTACGCAT TAAGCGCAGG ACGTGCATTG AAACGCCATG CATCGCATTT 4440
467 GTCTGCTGAA GAAATGGCAT ATGAGAGCTT GAAAGTAGCG GCTGATATTT GTGTCTTTAC 4500
469 CAACGATAAT ATTGTTGTCG AAACACTATA ATAATCAGAG CACGATAAAT AATTACGAGC 4560
471 AATTAATTTT AGTTAAAAGA CGGAGGAATG AAATTAATGG ATACAGCTGG AATAAGATTA 4620
473 ACTCCAAAAG AAATCGTATC TAAATTAAAT GAATACATCG TTGGACAAAA TGATGCTAAA 4680
475 CGTAAAGTGG CAATTGCCCT ACGTAATCGA TACAGAAGAA GTTTATTAGA TGAGGAATCA 4740
477 AAGCAAGAAA TTTCACCTAA AAATATTTTG ATGATTGGAC CAACCGGCGT TGGTAAAACT 4800
479 GAAATTGCAA GAAGAATGGC CAAAGTTGTC GGCGCGCCAT TTATAAAAGT AGAAGCTACT 4860
481 AAATTTACTG AGGTAGGTTA TGTAGGACGA GATGTTGAAA GTATGGTTAG AGATCTTGTT 4920
483 GATGTTTCAG TAAGATTAGT CAAGGCGCAG AAAAAATCAT TGGTACAAGA TGAAGCAACA 4980
485 GCTAAGGCCA ATGAAAAACT TGTTAAGTTA TTAGTTCCAA GTATGAAAAA GAAAGCGTCT 5040
487 CAAACGAATA ATCCTTTAGA GTCACTTTTC GGAGGTGCAA TTCCAAATTT CGGACAAAAT 5100
489 AACGAAGATG AAGAAGAACC ACCTACTGAG GAAATTAAAA CAAAACGTTC TGAAATTAAG 5160
491 AGACAGCTAG AAGAAGGCAA ACTTGAAAAA GAAAAGGTAA GAATTAAAGT CGAACAAGAT 5220
493 CCTGGTGCTT TAGGTATGCT AGGTACAAAT CAAAATCAGC AAATGCAAGA GATGATGAAT 5280
495 CAATTAATGC CTAAAAAGAA AGTTGAGCGA GAAGTTGCTG TTGAGACGGC AAGGAAAATC 5340

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Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; N Pos. 5870
Seq#:2; N Pos. 6413,6515
Seq#:3; N Pos. 12
Seq#:4; N Pos. 13226,13259,13306
Seq#:5; N Pos. 7405,8480
Seq#:6; N Pos. 21,86,1981
Seq#:7; N Pos. 530
Seq#:10; N Pos. 812
Seq#:12; N Pos. 4533,6063
Seq#:13; N Pos. 40
Seq#:14; N Pos. 15,17
Seq#:15; N Pos. 1136,1641
Seq#:16; N Pos. 110,151,166,12925,12983
Seq#:18; N Pos. 30,71
Seq#:19; N Pos. 1009,5174
Seq#:20; N Pos. 50,10414,10464
Seq#:21; N Pos. 1916,3628,3632
Seq#:22; N Pos. 722
Seq#:24; N Pos. 566
Seq#:25; N Pos. 5455
Seq#:26; N Pos. 4877,4891,4900
Seq#:27; N Pos. 578
Seq#:28; N Pos. 1
Seq#:29; N Pos. 18
Seq#:31; N Pos. 8879,13834
Seq#:32; N Pos. 10002,10004,10009,10011
Seq#:33; N Pos. 9,14,102,7495,7548
Seq#:35; N Pos. 779,799,832
Seq#:36; N Pos. 6867,6885
Seq#:38; N Pos. 16340,16343,23432,23434,23436
Seq#:39; N Pos. 4416,4433,4460
Seq#:42; N Pos. 482
Seq#:44; N Pos. 21,9821
Seq#:46; N Pos. 98,16804,16809,16822
Seq#:47; N Pos. 3938,3961,3979
Seq#:48; N Pos. 7775
Seq#:49; N Pos. 1107
Seq#:50; N Pos. 5594
Seq#:51; N Pos. 9,26,28
Seq#:52; N Pos. 6340,6420
Seq#:53; N Pos. 464,548,11126,13852
Seq#:54; N Pos. 117,3378,3380
Seq#:55; N Pos. 984,995,1021,1051
Seq#:56; N Pos. 13161,13577

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 09/01/2004
PATENT APPLICATION: **US/10/807,556** TIME: 12:50:43

Input Set : **N:\Crf3\RULE60\10807556.raw**
Output Set: **N:\CRF4\09012004\J807556.raw**

Seq#:57; N Pos. 12850
Seq#:58; N Pos. 9,13,43,8541,8726
Seq#:59; N Pos. 1416,5064,16381
Seq#:60; N Pos. 2069,2071
Seq#:61; N Pos. 5
Seq#:62; N Pos. 10,19,6002
Seq#:63; N Pos. 8,19,83,1751,8059,8119

VERIFICATION SUMMARY DATE: 09/01/2004
PATENT APPLICATION: **US/10/807,556** TIME: 12:50:43

Input Set : **N:\Crf3\RULE60\10807556.raw**
Output Set: **N:\CRF4\09012004\J807556.raw**

9 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
1 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
5 M:220 C: Keyword misspelled or invalid format, [(ix) TELECOMMUNICATION INFORMATION:]
11 M:111 C: (47) String data converted to upper case,
11 Repeated in SeqNo=1
21 M:111 C: (47) String data converted to upper case,
11 Repeated in SeqNo=2
559 M:111 C: (47) String data converted to upper case,
11 Repeated in SeqNo=3
573 M:111 C: (47) String data converted to upper case,
11 Repeated in SeqNo=4
1147 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=5
1397 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=6
1547 M:111 C: (47) String data converted to upper case,
1565 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=8
1647 M:111 C: (47) String data converted to upper case,
1693 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=10
1727 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=11
2139 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=12
2321 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=13
2375 M:111 C: (47) String data converted to upper case,
2423 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=15
2563 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=16
3051 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=17
3069 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=18
3135 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=19
3385 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=20
3753 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=21
3881 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=22
4101 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=23
4685 M:111 C: (47) String data converted to upper case,
111 Repeated in SeqNo=24

VERIFICATION SUMMARY DATE: 09/01/2004
PATENT APPLICATION: **US/10/807,556** TIME: 12:50:43

Input Set : **N:\Crf3\RULE60\10807556.raw**
Output Set: **N:\CRF4\09012004\J807556.raw**

925 M:111 C: (47) String data converted to upper case,
11 Repeated in SeqNo=25
101 M:111 C: (47) String data converted to upper case,
11 Repeated in SeqNo=26
293 M:111 C: (47) String data converted to upper case,
78381 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5192 after pos.:144
78565 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5194 after pos.:304
79049 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5202 after pos.:48
79095 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5203 after pos.:0
41 Repeated in SeqNo=5203
79392 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5207 after pos.:176
41 Repeated in SeqNo=5207
79614 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5211 after pos.:0
79797 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5213 after pos.:272
80115 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5220 after pos.:112
80229 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5222 after pos.:64
80547 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5227 after pos.:112
81319 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5235 after pos.:880
81340 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5236 after pos.:16
41 Repeated in SeqNo=5236
81586 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5240 after pos.:0
41 Repeated in SeqNo=5240
82054 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5245 after pos.:176
82654 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5250 after pos.:176
82675 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5251 after pos.:0
82840 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5252 after pos.:240
83143 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5255 after pos.:144